January 1972

Test 1105: Deutz D100 06 Diesel

Tractor Museum
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NEBRASKA TRACTOR TEST 1105 – DEUTZ D100 06 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1066 rpm)								
105.04	2400	7.235	0.480	14.52	air-cooled	68	75	28.797
Standard Power Take-Off Speed (1000 rpm)—One Hour								
101.19	2250	7.032	0.484	14.39	air-cooled	68	75	28.780
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
93.49	2509	5.733	0.427	16.31	air-cooled	67	74	.....
0.00	2586	1.714	.....	.....	air-cooled	65	71	.....
47.35	2543	3.519	0.518	13.46	air-cooled	66	73	.....
105.13	2400	7.245	0.480	14.51	air-cooled	68	76	.....
23.86	2563	2.584	0.754	9.23	air-cooled	68	75	.....
70.59	2527	4.488	0.443	15.73	air-cooled	68	75	.....
Av 56.74	**2521**	**4.214**	**0.517**	**13.46**	**air-cooled**	**67**	**74**	**28.783**

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool-ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—11th Gear (Z4)											
88.87	5747	5.80	2400	5.86	7.322	0.573	12.14	A-cooled	65	76	28.900
75% of Pull at Maximum Power—Ten Hours—11th Gear (Z4)											
72.41	4317	6.29	2562	4.32	5.355	0.515	13.52	A-cooled	68	72	28.872
50% of Pull at Maximum Power—Two Hours—11th Gear (Z4)											
48.09	2828	6.38	2554	2.74	4.109	0.595	11.70	A-cooled	62	67	28.990
50% of Pull at Reduced Engine Speed—Two Hours—12th Gear (N4)											
48.30	2830	6.40	1996	2.49	3.356	0.483	14.39	A-cooled	72	85	28.950
MAXIMUM POWER WITH BALLAST											
77.70	9979	2.92	2495	14.74	8th Gear (N2)			air-cooled	72	83	28.980
89.83	9421	3.58	2396	10.33	9th Gear (Z3)			air-cooled	65	76	28.910
90.29	7130	4.75	2401	7.12	10th Gear (N3)			air-cooled	65	76	28.910
90.92	5875	5.80	2400	5.90	11th Gear (Z4)			air-cooled	67	75	28.850
90.66	4511	7.54	2397	4.33	12th Gear (N4)			air-cooled	65	76	28.910
91.13	3597	9.50	2401	3.19	13th Gear (Z5)			air-cooled	65	76	28.910

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST
11th Gear (Z4)

Pounds	5875	6035	6313	6400	6389	6357
Horsepower	90.92	83.66	77.64	68.92	59.02	48.87
Crankshaft Speed rpm	2400	2156	1918	1683	1444	1201
Miles Per Hour	5.80	5.20	4.61	4.01	3.46	2.88
Slip of Drivers %	5.90	6.21	6.21	6.52	6.52	6.52

TRACTOR SOUND LEVEL	dB(A)
Maximum Available Power 2 Hours	100.5
75% of Pull at Max. Power 10 Hours	99.5
50% of Pull at Max. Power 2 Hours	100.0
50% of Pull at Reduced Engine Speed 2 Hours	94.5
Bystander—16th Gear (N6)	89.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi	Two 20.8-38; 8; 16	Two 20.8-38; 8; 16
Ballast	—Liquid	1030 lb each	None
	Cast Iron	1690 lb each	None
Front Tires	—No., size, ply & psi	Two 11.00-16; 6; 24	Two 11.00-16; 6; 24
Ballast	—Liquid	None	None
	Cast Iron	310 lb each	None
Height of drawbar		23½ inches	24½ inches
Static weight with operator—rear		10870 lb	5430 lb
	front	3570 lb	2950 lb
	total	14440 lb	8380 lb

L. F. LARSEN, Engineer-in-Charge
G. W. STEINBRUEGGE, Chairman; W. E. SPLINTER; D. E. LANE—
Board of Tractor Test Engineers

Department of Agricultural Engineering

Dates of Test: August 22 to September 5, 1972

Manufacturer: KLOCKNER-HUMBOLDT-DEUTZ A.G., COLOGNE, WEST GERMANY

FUEL, OIL AND TIME **Fuel** No. 2 Diesel **Cetane No.** 54.5 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60°** 0.8365 **Weight per gallon** 6.965 lb **Oil SAE** 30 **API service classification** SB/SE-CA/CD **To motor** 4.277 gal **Drained from motor** 2.795 gal **Transmission and final drive lubricant SAE** 20 **Total time engine was operated** 51½ hours

ENGINE **Make** Deutz Diesel **Type** 6 cylinder air-cooled **Serial No.** 5049767 571/6 **Crankshaft Mounted** lengthwise **Rated rpm** 2400 **Bore and stroke** 3.94" x 4.72" **Compression ratio** 17 to 1 **Displacement** 345 cu. in. **Cranking system** 12-volt electric **Lubrication** pressure **Air cleaner** dry replaceable paper element with automatic dust unloader **Oil filter** replaceable pleated paper cartridge **Oil Cooler** radiator in-cooling system **Fuel filter** replaceable primary paper element and replaceable secondary paper cartridge **Muffler** was used **Cooling medium temperature control** air-cooled

CHASSIS **Type** standard **Serial No.** 7927/1869 **Tread width** rear 64" to 84" front 56" to 76" Wheel base 100.4" **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 32" Vertical distance above roadway 35" Horizontal distance from center of rear wheel tread 1" to the left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio partially synchronized

Advertised speeds mph first 0.7 second 0.8 third 1.0 fourth 1.3 fifth 1.6 sixth 2.1 seventh 2.5 eighth 3.2 ninth 3.9 tenth 5.0 eleventh 6.0 twelfth 7.7 thirteenth 9.6 fourteenth 12.3 fifteenth 15.2 sixteenth 19.4 reverse 0.9, 1.4, 2.1, 3.4, 5.2, 8.1 & 12.9 **Clutch** dry disc dual clutch operated by foot pedal and hand lever for PTO **Brakes** internal expanding shoes operated hydraulically by two foot pedals than can be locked together **Steering** hydraulic with power assist. **Turning radius** (on concrete surface with brake applied) right 161 left 161 (on concrete surface without brake) right 182 left 182 **Turning space diameter** (on concrete surface with brake applied) right 338 left 338 (on concrete surface without brake) right 378 left 378 **Belt pulley** 1380 rpm at 2400 engine rpm diam 11" face 7" **Belt speed** 3970 fpm **Power take-off** 1000 rpm at 2250 engine rpm.

REPAIRS AND ADJUSTMENTS: During maximum drawbar run in 13th gear (Z5) the left rear wheel weights fell off. These were replaced and the bolts holding the right rear wheel weights were rechecked. Following this a short occurred in the instrument panel. This was corrected and the test continued.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. First, second, third, fourth, fifth, sixth and seventh gears were not run as it was necessary to limit the pull in eighth gear because of excessive slippage. Fourteenth, fifteenth and sixteenth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1105.**

The University of Nebraska Agricultural Experiment Station
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